

NOMENCLATURE, LIFE HISTORIES, AND RECORDS OF NORTH AMERICAN UREDINALES¹

GEORGE B. CUMMINS AND JOHN W. BAXTER²

NOMENCLATRURAL NOTES

1. *PUCCINIA AGRIMONIAE* (Arth.) Arth. Manual of Rusts in U.S. and Canada, p. 295. 1934. The type specimen consists of leaves of *Agrimonia pubescens* Wallr. bearing uredia of *Pucciniastrum agrimoniae* (Diet.) Tranz. and unattached teliospores that are identical with those of *Puccinia lateripes* Berk. & Rav., Grev. 3:52. 1874. The contaminant teliospores probably are from infected *Ruellia strepens* L. which Bartholomew collected at the same place and time (Sumner, Missouri, 7 Oct. 1907, *F. Columb. No. 2667*). Therefore, *Puccinia agrimoniae* falls into synonymy under *Puccinia lateripes*.

2. *PUCCINIA BOUARDIAE* Griff., Bull. Torrey Club 20:297. 1902. *Puccinia anisacanthi* Diet. & Holw., Bot. Gaz. 31:329. 1901. Reidentification of the host plant of the type of *P. bouvardiae* as *Anisacanthus thurberi* (Torr.) Gray instead of *Bouvardia triphylla* Salisb. made clear the relationship of these two rusts which are recorded from southern Arizona and Mexico. *Puccinia bouvardiae* falls into synonymy under *P. anisacanthi*.

3. *Puccinia eumacrospora* Cumm. nom. nov. *Puccinia macrospora* Arth. Mycologia 1:244. 1909; not *Puccinia macrospora* (Lk.) Spreng. Syst. 4:569. 1827.

4. *PUCCINIA XANTHIIFOLIAE* Ell. & Ev., Jour. Myc. 6:120. 1891. *P. helianthi* Schw., Schr. Nat. Ges. Leipzig 1:73. 1822. That these two entities are the same was demonstrated by Baxter (1958), who successfully inoculated seedlings of *Helianthus annuus* L., grown in the greenhouse, with urediospores from *Iva xanthifolia* Nutt. collected near Guernsey, Wyoming, in 1957. In 1960, urediospores from *Helianthus annuus* collected by Baxter near Greeley, Colorado, infected *Iva xanthifolia* at Milwaukee, Wisconsin. *Puccinia xanthiifoliae* falls into synonymy under *P. helianthi*.

LIFE HISTORY STUDIES

PUCCINIA ESCLAVENSIS Diet. & Holw. Aeciospores of *Aecidium mirabilis* Diet. & Holw. on *Mirabilis longiflora* L., produced uredia and telia of *Puccinia esclavensis* on *Panicum bulbosum* H. B. K. in a field inoculation by Baxter near Portal, Arizona, August, 1960. In May, 1961, over-

¹ Journal Paper No. 1707, of the Purdue University Agricultural Experiment Station.

² The first author acknowledges Grants-in-Aid from the Society of the Sigma Xi and the Purdue Research Foundation and the privilege of working at the Jackson Hole Biological Research Station, Dr. L. Floyd Clarke, Director; the second author acknowledges a Grant-in-Aid from the National Science Foundation and the use of facilities of the Southwestern Research Station, Dr. Mont L. Cazier, Director.

wintered teliospores were used in greenhouse inoculations of *Mirabilis jalapa* L., producing spermatogonia and aecia.

NEW RECORDS

1. *AECIDIUM BOUVARDIAE* Diet. & Holw. On *Bouvardia glaberrima* Engelm. near Southwestern Research Station, Portal, Cochise County, Arizona, 16 August, 1960, *Baxter* (PUR); Garden Canyon, Huachuca Mountains, Cochise County, Arizona, 5 September, 1959, 10 September, 1960, *Gooding* 239-59, 266-60 (PUR). These are the first records of the fungus from the United States. The species is heteroecious. In 1961, Cummins noted intimate association with rusted *Leptochloa dubia* (H. B. K.) Nees in the Santa Rita and Chiricahua Mountains, Arizona, and used aeciospores successfully to infect *L. dubia* in a field inoculation conducted at the Southwestern Research Station near Portal. The fungus is a species of *Puccinia*, as yet unidentified.

2. *AECIDIUM CHAMAECRISTAE* Arth. On *Cassia fasciculata* Michx., Ames, Iowa, 5 June, 1960, *Baxter* (PUR). The species was known before only from Kansas and Nebraska.

3. *BUBAKIA MEXICANA* Arth. On *Croton* sp., Garner State Park, Uvalde County, Texas, 26 June, 1961, *Miller* (PUR). This is the first record of this rust from the United States.

4. *MELAMPSORA ARCTICA* Rostr. On *Salix anglorum* Cham., Breccia Peak, above Togwotee Pass, Wyoming, 29 August, 1960, *Cummins* 60-98 (PUR). This species has not been found previously in Wyoming and only rarely in the United States. The site is in alpine tundra.

5. *PHAKOPSORA CROTALARIAE* (Diet.) Arth. On *Crotalaria vitellina* Ker., Acapulco, Mexico, October 1894-March 1895, *Palmer* 217 (PUR). This material, the first North American record, was found on a phanerogamic specimen in the Chicago Natural History Museum.

6. *PUCCINIA ACROPHILA* Pk. On *Synthyris pinnatifida* S. Wats. var. *pinnatifida*, near timberline, north side of Teton Pass, near Wilson, Wyoming, 5 September, 1960, *Cummins* 60-126 (PUR). This rarely collected species has not been recorded on this plant in Wyoming.

7. *PUCCINIA CORONATA* Cda. On *Agropyron trachycaulum* Malte and *Bromus anomalus* Rupr., Slide Lake, Gros Ventre River near Jackson, Wyoming, 30 August, 1960, *Cummins* 60-99, 60-103 (PUR); on *Calamagrostis rubescens* Buckl., Indian Paint Brush Canyon Trail, Grand Teton National Park, Wyoming, 17 August, 1960, *Cummins* 60-20 (PUR). Old aecia (spermatogonia lacking) occurred on *Elaeagnus canadensis* (L.) A. Nels. in close association at all sites.

8. *PUCCINIA DESCHAMPSIAE* Arth. On *Deschampsia caespitosa* (L.) Beauv., Signal Mountain, Grand Teton National Park, Wyoming, 6 September, 1960, *Cummins* 60-127 (PUR); near Wind River Lake, Togwotee Pass, Wyoming, 25 August, 1960, *Cummins* 60-84 (PUR). Previous records are from Colorado, Alberta, and Alaska.

9. PUCCINIA DRABAE Rud. On *Draba incerta* Payson, *D. sphaerocarpa* Macbr. & Payson, Breccia Peak, above Togwotee Pass, Wyoming, 29 August, 26 August, 1960, *Cummins 60-97, 60-86* (PUR). The site is in alpine tundra. *D. sphaerocarpa* is a new host for this rarely collected fungus.

10. PUCCINIA MONOICA Arth. On *Poa secunda* Presl., Breccia Peak, above Togwotee Pass, Wyoming, 23 August, 1960, *Cummins 60-80* (PUR). This is the first record of the species on *Poa* and the Festuceae. Old aecia on *Smelowskia calycina* (Stephan) Mey. occurred in the area and probably belong in the life cycle.

11. PUCCINIA MONTANENSIS Ell. On *Agropyron spicatum* (Pursh) Scribn. & Sm., Togwotee Pass road, 16 mi. east of Moran, Wyoming, 22 August, 1960, *Cummins 60-62* (PUR). Old aecia were common at the site on *Berberis repens* Lindl. and probably belong in the life cycle. The only demonstrated aecial host is *B. fendleri* Gray, but the distribution of the fungus on grasses far exceeds the distribution of this barberry. *B. repens* probably serves in northern areas.

12. PUCCINIA MUSENII Ell. & Ev. On *Lomatium montanum* C. & R., Breccia Peak, above Togwotee Pass, Wyoming, 26 August, 1960, *Cummins 60-90* (PUR). This relatively rare fungus has not been reported on species of *Lomatium*.

13. PUCCINIA PAGANA Arth. On *Lloydia serotina* (L.) Reichb., Breccia Peak, above Togwotee Pass, Wyoming, 23 August, 1960, *Roger S. Peterson (Cummins 60-80)*, (PUR). The location is above timberline. The only previous record is the type, collected on Pike's Peak, Colorado, in 1904 as on *Allium reticulatum* Don (Clements, Cryptog. Form. Colo. No. 141 as *Puccinia mutabilis*). Arthur questioned the identity of the host plant when he described *P. pagana*. Cummins visited the type locality in July, 1961, and found *P. pagana* on *Lloydia serotina* but no rust fungus on the intermingled *Allium*. There is no doubt that the host of the type is also *Lloydia serotina*.

14. PUCCINIA PATTERSONIANA Arth. On *Agropyron spicatum* (Pursh) Scribn. & Sm., Togwotee Pass road, 16 miles east of Moran, Wyoming, 22 August, 1960, *Cummins 60-61* (PUR). This fungus has not previously been recorded for Wyoming.

15. PUCCINIA WULFENIAE Diet. & Holw. On *Veronica wormskjoldii* R. & S., summit of Togwotee Pass, Wyoming, 20 August, 1960, *Cummins 60-55* (PUR). This relatively rare fungus has not previously been recorded on a species of *Veronica*.

Department of Botany and Plant Pathology,
Purdue University, Lafayette, Indiana.
Department of Botany,
University of Wisconsin, Milwaukee.

LITERATURE CITED

- Baxter, J. W. 1958. Notes on Rocky Mountain rust fungi. *Trans. Wis. Acad. Sci.* 47:131-135.